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APPLICATION NO. FILING DATE FIRST NAMED INVENTOR ATTORNEY DOCKET NO. CONFIRMATION NO. Joel C. Kent ELG055 USI 3231 10/603,514 06/24/2003 (2024773-7032 EXAMINER 10/19/2005 7590 Tyco Electronics Corporation PERVAN, MICHAEL Attn: Michael Aronoff ART UNIT PAPER NUMBER MS R20/2B 307 Constitution Drive 2677 Menlo Park, CA 94025-1164

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)	\neg	
Office Action Summary	10/603,514	KENT ET AL.		
	Examiner	Art Unit	\dashv	
	Michael Pervan	2677		
The MAILING DATE of this communication Period for Reply	n appears on the cover sheet w	ith the correspondence address		
A SHORTENED STATUTORY PERIOD FOR R WHICHEVER IS LONGER, FROM THE MAILIN - Extensions of time may be available under the provisions of 37 C after SIX (6) MONTHS from the mailing date of this communicati - If NO period for reply is specified above, the maximum statutory - Failure to reply within the set or extended period for reply will, by Any reply received by the Office later than three months after the earned patent term adjustment. See 37 CFR 1.704(b).	NG DATE OF THIS COMMUNI FR 1.136(a). In no event, however, may a on. period will apply and will expire SIX (6) MO statute. cause the application to become A	CATION. reply be timely filed NTHS from the mailing date of this communication. BANDONED (35 U.S.C. § 133).		
Status			1	
1) Responsive to communication(s) filed on				
,	,			
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.				
closed in accordance with the practice un	idel Ex parte Quayle, 1955 C.I	5. 11, 400 0.0. 210.		
Disposition of Claims				
4)⊠ Claim(s) <u>1-20</u> is/are pending in the application.				
4a) Of the above claim(s) is/are withdrawn from consideration.				
5) Claim(s) is/are allowed.				
6)⊠ Claim(s) <u>1-9 and 11-19</u> is/are rejected. 7)⊠ Claim(s) <u>10 and 20</u> is/are objected to.				
8) Claim(s) are subject to restriction and/or election requirement.				
5)	•			
Application Papers				
9) The specification is objected to by the Exa				
10) ☐ The drawing(s) filed on <u>June 24, 2003</u> is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.				
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).				
11) The oath or declaration is objected to by t				
Priority under 35 U.S.C. § 119				
12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).				
a) All b) Some * c) None of:				
 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No 				
3. Copies of the certified copies of the priority documents have been received in this National Stage				
application from the International Bureau (PCT Rule 17.2(a)).				
* See the attached detailed Office action for a list of the certified copies not received.				
Attachment(s)				
 Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-9) 	, 	y Summary (PTO-413) o(s)/Mail Date		
Notice of Draitsperson's Patent Drawing Review (+10-9) Information Disclosure Statement(s) (PTO-1449 or PTO/Paper No(s)/Mail Date 10/8/03 & 3/14/05.		Informal Patent Application (PTO-152)		

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DETAILED ACTION

Claim Rejections - 35 USC § 103

- 1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. Claims 1-9 and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kushida et al. (US 4,677,336) in view of Adler (US 4,746,914).

In regards to claim 1, Kushida discloses in Figure 1B an acoustic substrate 21 having a surface, an acoustic transducer 24 and an acoustically diffractive grating 22 disposed between the substrate and the transducer, the diffractive grating coupling acoustic energy within the acoustic transducer to an acoustic wave propagating along the surface of the substrate (see Figure 1B; col. 3, lines 35-39 and col. 4, lines 38-43).

In regards to claim 11 Kushida discloses in Figure 1B an acoustic transducer 24 and an acoustically diffractive grating 22 disposed between the substrate and the transducer, the diffractive grating coupling acoustic energy within the acoustic transducer 24 to an acoustic wave propagating (acoustic wave could propagate along a

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horizontal and vertical direction) along the surface of the substrate (see Figure 1B; col. 3, lines 35-39 and col. 4, lines 38-43).

In regards to claims 1 and 11, Kushida does not disclose a touch sensor or touch display device or a transparent acoustic substrate. Adler discloses a touch sensor and a touch display device (col. 3, lines 60-67) and a transparent acoustic substrate (see Figures 1 and 2; col. 4, lines 5-8 lines 15-20, 53-68 and col. 5, lines 1-18). It would have been obvious at the time of invention to modify Kushida with the teaching of Adler since graphics or other information may be ordered up for display from a controller in response to an operator's command (col. 4, lines 5-8).

In regards to claims 2 and 12, Kushida discloses in Figure 2F the diffractive grating comprising an array of parallel elements (the inclines going from left to right are parallel with each other and the inclines going from right to left are parallel with each other).

In regards to claims 3 and 13, Kushida does not disclose the elements having a pitch equal to the wavelength of the acoustic wave. Adler discloses the elements having a pitch equal to the wavelength of the acoustic wave (col. 8, lines 39-42). It would have been obvious at the time of invention to modify Kushida with the teachings of Adler since acoustic wave energy would be available for reflection at the end of the array (col.8, lines 44-46) and the pitch equal to the wavelength of the acoustic wave would be better for applying in a touch sensor to determine the touching position.

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In regards to claims 4 and 14, Kushida discloses in Figure 1B the diffractive grating 22 is structurally distinct from the transducer 24 and the substrate 21 (each is its own separate entity combined in layers).

In regards to claims 5 and 15, Kushida discloses in Figure 1B the diffractive grating 22 structurally integrated with the substrate 21.

In regards to claims 6 and 16, Kushida discloses in Figure 1B the diffractive grating 22 is structurally integrated with the transducer 24 by way of 23.

In regards to claims 7 and 17, Kushida discloses in Figure 5B another acoustic transducer (the area of 14) and another acoustically diffractive grating 12 disposed between the substrate 11 and the transducer 14, the diffractive grating 12 coupling acoustic energy within the acoustic transducer to an acoustic wave propagating along the surface of the substrate.

In regards to claims 8 and 18, Kushida discloses in Figure 1B a substrate with a substantially flat surface (the bottom of 21).

In regards to claims 9 and 19, Kushida discloses the transducer comprising a piezoelectric element (col. 2, lines 38-39).

Allowable Subject Matter

3. Claims 10 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

- 4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art (Nakagawa US 6,392,167) is deemed relevant since it applies the use of a reflective grating such that the waves moving towards the grating and the waves reflected from the grating are 180 degrees out of phase from each other.
- 5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Pervan whose telephone number is (571) 272-0910. The examiner can normally be reached on Monday Friday between 8am 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MVP

Sept. 21, 2005

Lun-Yi Lao Primary Examiner L. Y. Law